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EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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FOOT-AND-MOUTH DISEASE.

Parliament, by a majority of more than 20 to 1, has negatived a practical vote of censure upon the Board of Agriculture's manner of dealing with foot-and-mouth disease. It is well to err upon the side of caution, and the present twelve hours' embargo upon Irish cattle at English ports is not an excessive detention, and is probably advisable. But the debate was chiefly remarkable for the complete reply which Mr. Russell made to attacks—unsupported by specific evidence—levelled against the Irish Veterinary Department. There is a strong tendency to throw stones at the Irish Department because of what happened last year. Disease existed unreported on a single Irish farm, and the Department cannot fairly be blamed for that. Its transmission to England and the havoc it wrought there form a good example of the rapidity with which a contagious disease may spread in a civilised country, and justify caution in the transit of animals. But they neither justify nor excuse the distrust of Irish administration which has since been so freely expressed in England. Laxity has been imputed to the Irish Department, and even incompetence of its staff has been insinuated. But, "since the first outbreak at Swords nearly a million head of cattle have passed over the Channel, and not a single case of foot-and-mouth disease has been detected at any English port." That was Mr. Russell's answer to the detractors of his Department, and it was a convincing one.

Our fear of foot-and-mouth disease in England, unless it is tempered with reason, may end in genuine "injustice to Ireland." We should remember that we have imported the disease from the Continent much more often than from Ireland, and that Ireland herself is less exposed to the danger of importing Continental infection than England.

VETERINARY EXAMINATION OF TRAVELLING STALLIONS.

At the recent meeting of the Clydesdale Horse Society strong opposition was expressed to the foreshadowed compulsory veterinary examination and registration of travelling stallions. It is one of those questions in which a good deal may be fairly said on both sides, and we may return to it later. Some of the breeders' criticisms were not without weight—they are justified in claiming, for instance, that, apart from technical questions, they are themselves competent judges of what constitutes a good horse. On the other hand, no one can doubt that compulsory examination and registration is the surest method of checking the use of hereditarily unsound sires. That argument is such a strong one that it is bound to gain the day in time, and we have still some time before this projected legislation is introduced, with possibly also some delay before its full enforcement.

ACETOZONE IN THE TREATMENT OF SCOUR IN CALVES.

By B. J. P. MAHONY, M.R.C.V.S., Maryborough.

Subject.—Several calves attacked with Scour; the calves were the property of a farmer in the district. On my arrival I found two already dead and eight affected, two being in a very bad condition. I had no hopes of their recovery as they were passing considerable quantities of blood and mucus.

Treatment.—I determined to give Acetozone a trial, and promptly telegraphed to Parke, Davis & Co., the manufacturers to forward some on to me. I gave the calves Acetozone in milk every six hours, with the result that not only did the six recover, but also the two that I had despaired of got quite well after a few days.

I think the results were marvellous, and would strongly recommend its use in the treatment of the disease.

Perhaps I might point out that Acetozone contains 50 per cent. of Benzoyl-Acetyl-Peroxide, together with 50 per cent. of an inert powder, employed as a diluent. Parke, Davis & Co. claim that Acetozone is probably the most powerful non-toxic germicide known, being relatively more potent than hydrogen peroxide, mercuric chloride or carbolic acid. The manufacturers inform me that it has proved of very great value in canine distemper, gastro-enteritis and joint-evil in foals, as well as in the treatment of parasitic scouring, contagious abortion, etc., and that it may also be dissolved in water and used as a lotion.

I might say that I did not find the preparation very soluble, but am informed that it is the inert diluent that remains undissolved, and that it is not really necessary to filter the solution. The strength of the solution should be about 20 grains to a quart of water or milk.

"FLOATING KIDNEY" IN A DOG.

Hebrant and Antoine, remarking that accidental displacement of the kidney, common as it is in the human subject, has not yet to their knowledge been recorded in veterinary literature, relate the following case. The subject was a female hound (age not stated) used for hunting by scent. The history was that for some time previously the animal had failed to keep pace with the rest of the pack, and had shown enlargement of the abdomen. At first pregnancy was suspected, but the expiration of the re-

gular term of gestation showed this idea to be wrong. The bitch was then examined by a veterinary practitioner, who, on palpating the abdomen, distinctly felt an abnormal body situated behind the stomach. She continued for some time to be used in the hunt, but found it more and more difficult to keep pace with the pack, and at the same time began to put on flesh. Her appetite throughout was voracious. Finally she was sent to the Brussels School for examination by the authors.

They found her in very good condition—rather too fat for a hunting dog—and her general health appeared normal. Palpation of the abdomen revealed the existence of a reniform, elongated body, slightly sensitive to pressure, floating in the midst of the intestinal mass and easily displaceable either forwards or backwards. The surface of this body was smooth, and it seemed to be free from all adhesions to the viscera; it appeared, however, to be sustained from the lumbar region by a band, for it was impossible to draw it down to the linea alba.

Despite its great resemblance to a kidney, the authors hesitated to regard this body as one; it being the first time they had encountered such a case. They remark that they would have had no hesitation had the subject been a cat, as they are accustomed to recognise both kidneys by abdominal palpation in cats. In this case the presence of a tumour of the mesentery appeared possible, and an exploratory laparotomy was decided upon. This proved that the body in question was the left kidney, hanging in the midst of the intestines and supported by its ordinary means of attachment, which were elongated and had attained a length of from 3 1/5th to 4 inches.

The authors explain that the kidney may be displaced from its normal position either *suddenly*, in consequence of a traumatism or other violently acting cause, or *slowly*, by a relaxation of its various means of attachment. The first occurrence is rare in the human subject, but the present case appears to come into the category of sudden displacement. The employment of the dog, which had been very active in the hunt and had certainly made many jumps and violent efforts, seems to the authors to indicate an initial sudden and violent displacement of the kidney.

The symptoms are accounted for by the pain produced by the kidney drawing upon its attachments during rapid progression, and the tendency to obesity may be set down to diminution in the exercise taken. It is noteworthy that spasms or crises of pain were never observed, and the authors explain this by citing the habitual resistance of sporting dogs to painful sensations.

Two methods of treating displacement of the kidney are practised in human surgery, viz., nephrorhaphy, or fixation of the kidney, and nephrectomy, or simple removal. Nephrectomy is a serious operation, often entailing death, and is only justifiable when the displaced kidney is diseased, degenerated, or affected with pyonephrosis, or when nephrorhaphy has been attempted and has failed. None of these conditions were present in this case. On the other hand, nephrorhaphy did not appear hopeful, in view of the violent exercise which the dog would subsequently have had to undergo in hunting, and which would have endangered the stability of any artificial fixation. It was therefore decided that the animal should be destroyed.—(*Annales de Méd. Vét.*).

W. R. C.

THE CENTRAL VETERINARY SOCIETY.

A general meeting was held at 10 Red Lion Square W.C., on Thursday, Feb. 6th.

The Hon. Sec. having announced that a letter had been received from the President, Mr. J. W. McIntosh regretting his inability to be present, Mr. R. J. Foreman, Vice-President, was unanimously elected to the chair.

The following Fellows signed the attendance book:—Messrs. J. Willett, J. B. Buxton. A. Crabb, R. Bennett, D. Stewart, J. F. Macdonald, R. Bryden, R. J. Foreman, G. Gofton, Prof. E. B. Reynolds, G. H. Livesey, W. L. Harrison, N. Almond, Sidney Villar, Prof. G. H. Wooldridge, W. Hunting, F. W. Willett, Henry Gray, H. D. Jones, Wm. Perryman, W. Willis, Sydney H. Slocock, W. R. Clarke, Guy Sutton, T. S. Price, and Hugh A. MacCormack, Hon. Sec. Visitors: Messrs. E. J. Farbrother and Geo. A. Banham.

The minutes of the last meeting were, on the motion of Mr. Stewart, taken as read and confirmed.

The Hon. Sec. announced that telegrams had been received ftom Mr. W. S. Mulvey and Mr. J. C. Coleman regretting their inability to attend the meeting.

Correspondence.

The Hon. Sec. read the following letters from Sir S. Stockman and Mr. T. C. Toope:

International Veterinary Congress, 1914.

Dear Sir,—As you are probably aware it was decided at the first general meeting of the Committee of Organization held on July 6th, 1911, that all Presidents and Secretaries of the various Veterinary Associations at that date should be *ex officio* members of the Committee. At a meeting held on January 10th, 1913, it was further decided to ask subsequent Presidents of these Associations to become *ex officio* members. Would you kindly submit this to the present President of your Society, and inform me at your earliest convenience if he will be good enough to accept the invitation, and forward his name.

To prevent any misunderstanding I desire to point out that the acceptance of the invitation by the existing President does not displace the previous President as a member of the Committee.—Believe me, yours truly,

S. Stockman, Hon. Sec.

National Veterinary Association.
(Southern Branch).

Dear MacCormack,—I have to-day sent you a supply of schedules and scales of fees adopted by above Society, also some circular letters for circulation amongst your members who are veterinary inspectors. What is really wanted is a practically simultaneous movement in various counties that need an improvement. Then the deputations cannot be met with the argument that has been used "that you are as well paid as are your neighbours in adjoining counties," a rather difficult position to deal with. If you need more kindly drop me a line. —With kind regards, sincerely yours,

Theo. C. Toope.

Morbid Specimens.

Prof. Wooldridge produced two calculi or concretions from pigs, for which he was indebted to Mr. Storrar, of

Chester. They were taken from two different pigs. The larger one was in the stomach, and was only found in the slaughterhouse on the slaughter of a fat pig. Its presence was never even suspected. The smaller one was responsible for the death of the pig in question, and was found in the intestines, causing a complete stoppage. He presumed both calculi developed in the stomach. In each specimen there was a suggestion of constriction of the middle, and from that point towards each end bristles were directed; so that one might, without a very great stretch of imagination, liken the ends to a shaving brush. The larger calculus had had a little section cut out out, in order to show the deeper parts, and they found bristles with bran and similar food substances.

A second exhibit consisted of the prostate, bladder, and kidney of a collie-retriever mongrel. The symptoms were simply those of retention of urine; and on manipulation of the abdomen considerable enlargement could be found. It was very tense to manipulation and dense, suggesting a tumour formation; and on performing laparotomy, he found an enlarged prostate, about the size of an orange and in front of it lying just above the bladder, a huge cyst about the size and shape of a large donkey's testicle. He punctured the cyst with a small trocar, and no fluid came. He applied an aspirator, and still nothing came out except a tiny blob of very tenacious material. He made an incision in order to evacuate it, and found it contained very viscid green material, containing floculent bodies as well. No hope was held of recovery in this case, the patient being almost in a moribund condition. The dog died within 12 hours of operation. On post-mortem examination, the kidneys were found both affected with interstitial metritis. In the cortex was a number of small cavities or cysts, due, he presumed, mainly to the damming back of the urine and inability to pass it. There was not a great amount of urine in the bladder. If they looked at the specimen carefully they would see there was a large prostate in it which had been divided down the centre in order to expose the urethra, to see if there was any direct communication between it and the cyst. They could find no duct at all. The cyst he referred to had been opened its full extent on the under surface.

He also exhibited the radius of a fat bullock killed only that week, for which in the open market £27 was paid; so the fellows could gauge from that fact the condition of the beast for food purposes. On slaughtering, its liver was found to be badly affected with tuberculosis, also the glands corresponding with the liver; and the lungs and the glands of the thorax. On examining the forelimb he found the elbow-joint badly tubercular. There was only very slight indication of trouble in the humerus, as it fitted into the elbow joint. Prof. Wooldridge commented on the frequency with which extensive tubercular lesions in animals that appeared in absolutely prime condition was met with, and in reply to a question said that so far as he could gather there was no history of lameness at all.

Prof. REYNOLDS showed a specimen from a five months old Irish terrier, consisting of the whole of the large intestine, showing part of the small gut, the ileum vaginated through its entire length and protruding from the anus for about four inches.

Mr. HENRY GRAY asked why Prof. Wooldridge termed the two hairballs of the pig "calculi"? He also wished to state to Mr. Reynolds that in his (the speaker's) experience the condition found in the specimen was much commoner than prolapse of the rectum. He had only seen it in outbreaks of distemper. He had seen nearly every puppy in Great Dane kennels suffering from distemper with protrusion of the inverted small intestine outside the anus. As long as the young creatures were fed on liquid food such as milk they would live for days and even weeks, but when an attempt was made to replace the organ in its proper situation death rapidly took place. In such cases he had never had success because intense inflammation set in the replaced bowel and death occurred within 24 hours; or the condition that gave rise to this complication always ended in death.

Mr. ALMOND remarked that the hair calculi which Prof. Wooldridge had kindly brought before them were not unique. He (the speaker) had seen several similar specimens; in fact, he had one himself that was given to him by Prof. Williams some time ago at Liverpool. In the case of the human subject, only a short time ago an operation was performed in which a complete cast of the stomach was formed by its contents, which consisted of hair, and it was removed successfully, and the affected person recovered.

The specimen of bone produced was interesting, because the lesion described was comparatively rare in the ox as compared with the pig.

Mr. BANHAM asked if Prof. Wooldridge had any idea of how the hair got into the pig.

Prof. WOOLDRIDGE presumed it was from its own body by rubbing on troughs, etc., but how the animal actually got it there he could not say.

Mr. BANHAM very much doubted this theory. He had never seen a pig eat anything off its own body, or anything of the kind; in fact he believed it was an impossibility. He thought the origin of the calculi was offal of other pigs. He had never found anything like it, and thought it could not be common.

Prof. WOOLDRIDGE replied that he did not suppose the cases were absolutely unique, but the fact remained that they were not common, as Mr. Banham had said. He (Prof. Wooldridge) thought his own explanation was a reasonable one. Undoubtedly the pig would require to eat a considerable amount, and the concretion would not form in five minutes. Replying further to Mr. Banham, the regularity of the hair was, in his opinion, due to the fact that it would be in constant movement.

Prof. REYNOLDS pointed out that each concretion was composed of hair of one colour, brownish black in one case, sandy in the other. He suggested that if they resulted from feeding on slaughterhouse offal they would be composed of hair of different colours.

Prof. WOOLDRIDGE replied that in the slaughterhouses in Cheshire they are not limited to one breed. No chemical or histological examination would be made of the specimens. Another argument against the offal suggestion was the apparent structure. Obviously the pig had not been on meat offals, but on wheat offals.

The CHAIRMAN observed that in calves a great many such hair balls were found, due to the animals licking themselves.

ELECTION AND NOMINATION OF FELLOWS.

The following gentlemen were ballotted for, and declared unanimously elected Fellows of the Society:—

Mr. J. B. RUTHERFORD, 56, Worship Street, E.C.

Mr. SYDNEY SLOCOCK, Jun., Hounslow.

Mr. F. J. TAYLOR, 165, Church Street, Kensington, W.

Mr. W. S. KING, M.R.C.V.S., 23, East India Dock Road, E., was nominated, and will come up for election at the next meeting.

MOTION BY MR. J. WILLETT.

The following motion was on the Agenda in the name of Mr. Willett:—

"The Central Veterinary Society views with much dissatisfaction that, according to the reports of their Delegates to the Sanitary Congresses, the resolutions arising from the debates of the Veterinary Section are not embodied in the reports of the Congress, owing to the said debates being held on the last day. They are of the opinion that no further Delegates should be sent unless better facilities are offered."

Mr. J. WILLETT apologised for not being present at the last meeting when the discussion was opened, and thanked Mr. Slocock for so ably opening the discussion in his absence. The Fellows would have seen from *The Record* that, since the motion had been on the Agenda, the whole position had been altered. A letter appeared from Mr. Dixon, of Leeds, Hon. Sec. for the Conference of Veterinary Inspectors, saying that the Sanitary Institute decided that the Veterinary Inspectors' Conference should start on Thursday. That was very satisfactory. On the previous day he had an interview with the Secretary at the Sanitary Institute, and he very courteously went into the matter, and said that they were trying to arrange for the Conference of Veterinary Inspectors to be held on the Wednesday. That, he considered, much more satisfactory and as the various discussions seemed to have had the desired effect, he asked their permission and that of his seconder to withdraw his motion, but would like to put on record our appreciation of the courtesy shown by the Sanitary Congress Committee in granting us an earlier day for discussion.

Prof. WOOLDRIDGE, the seconder, having concurred, permission was given by the meeting for the motion to be withdrawn.

"NOTES ON THE PROBLEMS OF EVERY-DAY DOG PRACTICE," by Mr. G. H. LIVESEY. (Resumed Discussion)

Mr. GUY SUTTON, in continuing the discussion, thanked Mr. Livesey for introducing a few difficult points met with in dog and cat practice. The education of veterinary surgeons was rather wanting in that branch of their profession.

Regarding conditions grouped under the term "Ear Canker," he quite agreed that fully ninety per cent. were parasitic in origin, and that their best efforts should be devoted to the destruction of acari. He had had most success with silver nitrate and perchloride of mercury in solution, iodine, and nitrate and oxide of mercury ointment. He had found the latter quite useful if put in every fourth or seventh day, and allowed to soak into the ear. The strength of the ointment was that used for the eye. If it was just put in the ear it distributed itself.

He would like to hear if Mr. Livesey could suggest any efficient treatment for chronic suppurating ears when probably there was ulceration of the cartilage. The case would go on for years, and there would be great difficulty in doing anything with it except patching it up.

Mr. Livesey's treatment of fracture of the radius was undoubtedly correct, the veterinary profession being rather too much inclined to put their animals into splints. In human surgery splints were not much used and far better results were obtained than formerly. With animals confined in a cage it was wonderful what recoveries took place.

In spinal meningitis, the symptoms described by Mr. Livesey were quite diagnostic of a disease, but with all respect he was not prepared to accept Mr. Gray's term "ossifying pachy-meningitis" until the condition was demonstrated pathologically. He had obtained beneficial results from the use of Iodide of arsenic internally, and the Iodine ointment sold as "Vetiod." Certainly dogs did recover; some of them had repeated attacks, but in other cases the trouble did not recur. That hardly seemed to coincide with ossifying membrane. He had lately seen two outbreaks of what appeared to be contagious meningitis in dogs. They started with a rigor, followed by high temperature; after three or four days the dogs reeled in their gait, and in a few days were quite all right. With regard to cases of interdigital abscess, if they were slit up and then treated with silver nitrate and iodine they cleared up. He knew they came again in many cases, but it did not seem necessary to dissect the lining of the abscess cavity. He had found that the recurrence might be prevented or minimised by painting in between the toes by dressing every three or four weeks with Tincture of iodine. Mr. Sewell tells me he gets good results in recurrent cases by treating with a vaccine. Personally vaccine treatment has not been brilliant in my hands, though the vaccines were prepared by experts.

As to worms, it was often most annoying when people said the dog did not get rid of the worms when sent to us. He advocated that an hour immediately after dosing the dog, it should be taken out for a walk, and allowed to play with a ball to engage the attention. That seemed to act very well. If not an enema might be given.

Cat diseases were a mystery to him. It was most difficult to differentiate between them. He thought probably there were several distinct contagious fevers in the cat. There were certainly other diseases than cat distemper. One was characterised by dribbling, and by a swelling of the mucous membrane lining the mouth, and sometimes ulceration. It was not often fatal. One-eighth of a grain of carbolic acid in a powder was a useful treatment in such cases.

Pneumonia, he thought, was a most fatal disease in the cat. At "The Zoo" a pneumonia in felines was recognised which killed readily within the 48th hour. He would like to ask the author what success he obtained in treating cats with sarcoptic mange.

The CHAIRMAN said that in certain ear cases in the human subject, a good deal of hydrogen peroxide of the strength up to five volumes was used. It was practically painless, caused a lot of bubbling and cleared out the *debris* wonderfully. Then the old-fashioned lead and opium lotion wanted a lot of beating, especially in the painful cases. In his district spinal meningitis seemed to occur in epidemics. Occasionally he had it recur in about six to twelve months. He queried whether it was spinal or not, as the front parts might be affected without the hind parts. He should have thought if it were spinal it would affect both parts if it affected the fore parts.

In luxation of the patellæ, he thought the method of exercising to make the dog walk regularly very ingenious indeed. In a case of his own with chronic dislocation of both patellæ to the inside he had tried a fair amount of force without anæsthetic, and could not move them at all. Of course there was great malformation.

In practice, his experience of worms was rather opposite to Mr. Livesey's. He himself had not been able to get very good results. To judge from the advertisements of quack medicines, there was never a failure with their doses, but that was not his experience. Exercising with a ball after a dose was fairly satisfactory, but he certainly had a large number of worm medicines in his dispensary which he either dare not use, or they are useless. He had had a fair amount of cat influenza, and had used the drug Mr. Sutton had mentioned, the small doses of medicinal carbolic.

A MEMBER asked if the cat had a certain dose of carbolic acid every day.

The Chairman replied in the affirmative. Cats did better on it than on anything else he had tried, although where a veterinary surgeon had not an infirmary it was very difficult to treat those things. Although he allowanced out the certain dose, he did not suppose the animals got anything like that by the owner's administration. The kittens were generally brought when they were giving that pathetic cry that meant death in an hour or two, so he rarely had a chance to see what treatment would do in their case.

Mr. HUGH A. MACCORMACK was surprised to hear that Mr. Livesey experienced such great difficulty in treating the cat for ear canker. There were two ear cankers; inflammation of the ear pure and simple, and

the other produced by an acarus. An oil dressing with any of the coal tar derivatives would cure the latter. The great trouble was the hatching out of the eggs; therefore if the animal's ear was dressed every third or fourth day, the successive broods of acari would be killed. For the other ear canker a dry dressing was more suitable, oxide of zinc, boracic acid, or calomel, with Fuller's earth used as a basis. One great difficulty was that the cats would lick their paws after cleaning their ears, many a cat being poisoned in that way. In dogs it was not so difficult. It was necessary to see, when dressing the ear, that the lotion or powder went well in. If the case was one of acari, the outside of the ear should also be dressed, and if it were a long-eared dog, the cheek of the dog should be dressed with the lotion; because the acari might get transplanted from the flap of the ear to the cheek.

He thought the iodine treatment Mr. Livesey mentioned very drastic, and he would be afraid to use it himself.

He remembered a case of fracture of the femur in a little fox terrier, in which he said the best thing to do was to have the dog destroyed. The owner agreed, but on making another visit to the farm some time after he (Mr. MacCormack) saw the dog still alive and had made a good recovery. Since then he had been very careful as to giving an opinion about destroying a dog with fractured legs. Mr. Livesey was quite right not to put a heavy splint on the legs, but he (Mr. MacCormack) did not like to leave the animal without something on it. The ordinary adhesive plaster was the best. The animal should be kept quiet in a small kennel, and if he tried to bite off the plaster he should be muzzled

He thanked Mr. Livesey for his ingenious treatment in luxation of the patellæ, but that treatment could only be adopted at a surgeon's own place, he had had excellent results from applying adhesive plaster.

With regard to digital abscesses, he had lanced them, caustics applied and even used the cautery, but they had reappeared. Latterly he had been trying iodine treatment, and thought he had obtained better results from injecting tincture of iodine with distilled water into the sac. It should be injected every fifth day, and should the trouble recur it would be benefitted if the owner was warned to come as soon as it started swelling.

He thought that the disappointment resulting from the treatment of worms was due to insufficient care. Twenty-four hours' starvation should not be imposed. Give a saline purge if the patient had a special liking for castor oil, the better thing to do was to add to it a little lime water, and in a way emulsify it The animal ought to be fed lightly the day previous to the purge, the purge being given in the evening and next morning, the worm medicine. The animal should be taken out and kept occupied running about, and in half an hour give an enema of warm water, powdered areca nut being added. Get the animal to keep it in as long as it could, the worms would soon come to light. If they could prevent the dog from being sick, it was half the battle.

Mr. ALMOND agreed with Mr. Livesey in his estimate of the cause of ear canker, and his experience was the same. He found that the simple dusting into the ear of boracic acid in 19 cases out of 20 would remove the trouble. In those cases which were not due to acari but to inflammatory catarrh from other causes, the treatment had to be altered. The simple treatment had to be repeated night and morning, and for some time after the symptoms had disappeared. It should be continued till any ova present had hatched out.

With regard to fractures, it was well recognised at the present day that to treat a fracture successfully motion must be commenced comparatively early. In the human subject he believed the motion was commenced within a fortnight of the fracture. As to the case referred to by Mr. Sutton, of a man's wrist as compared with the dog, he did not think the two things could be compared. If a man fractured his wrist, and the bones were put in a proper position, he would use every endeavour to maintain them in that position, but he did not think anyone would say that dogs did the same thing. His experience of treating fractures of the radius was not unsuccessful, and it was a simple one. He used two splints made of cardboard cut into the shape of the limb, and covered on the inside with cotton wool. If the splint was put on with a padding of cotton wool on the inside, the dog would not interfere with it if it were comfortable, and *vice versa*. Assuming such a difficulty the animal could be prevented from tearing the splint off by using a collar just deep enough to cover the end of his nose. If that were kept up close to his ears he could not then get at anything.

As to so-called spinal meningitis, he found such cases intermittent. The dog might exhibit all the symptoms in the morning, and at comparatively short intervals show periods of intermission. He thought that almost negatived the suggestion of spinal meningitis. He was inclined to think it was of rheumatic origin.

A great many of the so-called inter-digital abscesses did not contain pus, but sero-sanguineous contents. He adopted the plan of immersion of the foot in a 5 per cent. solution of carbolic acid in water, the foot to be kept in the solution five minutes three times a day. In many cases that would disperse the condition that was forming, and in the event of the so-called abscess breaking, it would enable it to heal up and not recur, though he did not say the same dog would not have another abscess. Abnormal lactation had not been referred to by other speakers. He agreed with Mr. Livesey that it was a very great mistake to draw the milk from the udder.

One form of cat distemper was frequently associated with gangrene of the apex of the tongue and other parts of the mouth. That was a very distressing form of disease in cats. As to the difficulty of getting the cat to eat or drink, it was no doubt owing to the difficulty of prehension. He suggested supplying the milk in deep vessels.

Mr. HENRY GRAY said that after an experience of 25 years he did not find much trouble in the treatment of parasitic canker in cats and dogs which was due to an arachnid, and not to an insect, as stated by the essayist. His usual practice was to pour glycerine of iodine containing carbolic acid into the ear so that it reached the drum; he then compressed the root of the ear between the thumb and forefinger, so that the dressing loosened the dirt and reached the crevices, and afterwards wiped out the ear with cotton wool. This treatment was repeated every third or fourth day. The parasites could live some time in oil, sulphur ointment, and certain other materials. He disagreed from Mr. Almond's suggestion of boracic powder, which was inert so far as the parasites were concerned. The most difficult cases to treat were those due to chronic eczema or associated with the eczematous diathesis, which although responded to treatment for a time soon recurred. In cases of true otorrhæa associated with a yellowish cheesy discharge, treatment was generally difficult. But in ear complaints accompanied by a profuse discharge and arising during distemper or some other condition in the cat or dog, he found nothing superior to a simple mixture of fuller's earth and boracic acid. In chronic ulceration of the ear that did not respond to powders, glycerine of iodine or other mild treatment, he found nothing better than undilute Tincture of Iodine, and if that, after a time, failed he used undiluted liquor plumbi, which had a marvellous effect of hardening the mucous membrane. He had had recoveries even after six months' treatment of cases that had been indifferently or intermittently treated for one, two or more years. In

other instances, although he obtained improvement there was a recurrence, which he attributed to perforation of the drum, as when any liquid was poured into the ear there was on the part of the animal swallowing movements of the mouth.

As to meningitis and paralysis it was quite true that all cases were not due to chronic ossifying pachymeningitis. In the latter there was a definite train of symptoms, and definite results. In 90 per cent. of cases he found it to occur in the yellow dachshund in which it would appear in several members of the same family or strain. It was liable to recur from time to time and to finally end in permanent paralysis. There was an hereditary predisposition to this disease. Some people would not buy a certain strain of dachshund because it was so liable to the chronic ossifying pachymeningitis. In some cases it would be manifested by intense agony in one limb especially after feeding. On post mortem examination of such cases he found the lesions at the sensory roots of the nerves supplying the limb In cases of paralysis of one or both forelimbs the lesions were found involving the motor roots. Another form of meningitis, or meningo-myelitis accompanied by paralysis, arose in some dogs after exercise following confinement to the house or kennel for some time. He had seen such cases let loose at night-time for a run and found paralysed next morning. This form somewhat resembled the hæmoglobinuria in the horse. The head was extended by contraction of the superior muscles of the neck and dorsum, and the hind limbs were rigidly extended forward under the abdomen. Such cases were much less promising than those of chronic ossifying pachymeningitis.

With regard to luxation of the patella he would like to know how Mr. Livesey would treat it when it occurred in both limbs, or when it was due to faulty conformation or when it was congenital? In cases of chronic dislocation, when the patella was fixed to the side of the femoro-tibial joint he knew of no better method than dividing the straight femoral muscle, breaking down the adhesions and massaging the patellæ into position. He knew of no treatment for recurrent cases of luxation of the patellæ. Another form of luxation of the patellæ was that due to exaggerated abduction of the thighs. In this case the patellæ maintained their position by strapping the thighs together by means of special hobbles.

He was surprised to hear Mr. Almond make a statement he had done in regard to interdigital abscess. It was not a cyst. Mr. Almond should know that pus of the dog or cat was generally of a bloody nature; this was characteristic of the pus of carnivora. As to its treatment, he did not know how to prevent the disease, but painting with Tincture of iodine during the initial stage aborted its formation and prevented the development of an abscess. He had tried auto-inoculation, auto-vaccination, and other methods of immunisation, but had failed. In many dogs there were no recurrence or only after a long interval. In many other cases treated weekly, fortnightly, monthly, or so on, there would be a sudden disappearance for several months or a year or two. If vaccination were carried out in such cases, the usual conclusion would be that that effect was due to the cause—vaccination. He was sceptical, and thought that in the majority of cases conformation and the lymphatic temperament predisposed dogs to it.

As to "worms" causing disease his opinion was that it showed the ignorance of people when they attributed to them, as they generally did, the cause of disease. The only time when he thought worms might do damage was when they were present in excessive numbers during the weaning period. It was very easy to say "worms" as it was positive evidence to the owner, but it was not the true solution of the cause of many an illness, which they on post-mortem examination might find inflammation of the intestine, a foreign body, intussusception, broncho-pneumonia, etc.

As to what was called "influenza" of the cat, it was nothing more than a mild catarrhal form of distemper. There was nothing rare in it. In this connection he remarked that the history of animal plagues before and since the dawn of the Christain Era showed that there had been numerous of these epizoötics in the cat, which had been killed off by thousands during their occurrence. From a clinical study and post-mortem examination, he could not tell any difference between it and that of the dog; but they were not interchangeable. In many cases he found blackness of the ventricles of the larynx with a croupous exudate extending down the course of the trachea; the anterior and middle lobes of lungs were consolidated; and there were lesions of gastro-enteritis. He did not think they were any further forward in the differentiation of these complaints, any more than in the influenzas or catarrhs of the horse, than a hundred years ago, in spite of all the scientific and clinical research. Modern investigations all tended to show that they were due to one infection—an ultra-visible one, *plus* secondary or superadded infections, which were the most fatal, and gave rise to manifold manifestations. In some isolated cases of enteritis in the cat, attacking the jejunum and ileum, he found, on killing the animal sometime before natural death would have occurred, an abundant pure culture of a big streptococcus in the lumen of the gut. He did not know whether that was the cause, but he thought the disease was different to cat influenza or distemper. In some of these cases the peritoneal covering of the intestine had a pinkish blush; in others the mucous membrane had a greyish red and scalded appearance; and often the lumen of the gut contained flakes of a croupous exudate; in still others the mucous membrane was intensely reddened. Coma usually set in rapidly to be followed by death. All the investigations that had taken place had not settled the question of the unity or plurality of the causal organism of clinical conditions known under the (perhaps) generic term "influenza" in the horse or "distemper" in the cat or dog.

He could not accept absolutely what Mr. Livesey said about broken legs. He had seen many dogs with both radii fractured, and when splints were not put on they bent backwards forming almost a C curve. Not once, but time after time had he seen the leg bent laterally almost at right angles. He saw no objection to splints. If they were not applied the practitioner would, in case the limb became distorted or bent, lay himself open to be condemned by some of his *confrères* as being negligent. Percivall, as far back as 1849, and Youatt before him, treated certain fractures by limiting the movements of the animal in a hamper or confined space.

Mr. DAVIS looked upon canker of the ear as an eczema of the soft skin that lined the ear. Whether it was all set up by the acari or not he did not know, but he should think it was not. He agreed with the glycerine and iodine treatment, and also with Mr. Sutton's view that nitrate of mercury ointment was a very good remedy for the malady. He was quite sure that some cases would never get better; and in his experience white Pomeranians were the worst class of dogs in that respect.

While agreeing with Mr. Livesey that the majority of fracture cases would get right of themselves, he thought it best to put something on to limit the action of the muscles. He thought the best method was a bandage composed of a sort of strong muslin into which an emulsion of dextrine was put He remembered in one case he put a dextrine bandage on a fractured radius with a terrible wound, making a window for dressing the wound; and the dog made a perfect recovery. In a case of pachymeningitis in his practice, the dog was

paralysed and died, and on making a post-mortem he went to the trouble of getting out the whole of the cord, and he found the conditions Mr. Gray had described. It looked as though the dura mater had taken on the function of a periosteum. Scattered in little areas in many parts of the cord were fragments of fibrous tissue, cartilaginous tissue, and in other places pieces of actual bony tissue. It was natural to think that these would press on the cord and on the roots of the spinal nerves, and give rise at times to a species of neuralgia.

Abscesses between the toes he also found very difficult to cure. He opened them, let out all the contents, packed them full of gauze, and stitched them up, which had the effect of destroying the lining membrane. In the Eastern Counties an enormous number of wens in animals were observed, but by the treatment he had described, namely, evacuating and packing, practically the whole thing disappeared.

With regard to influenza and distemper of cats, their differentiation was difficult. Their agreements and differences reminded him of what was sometimes seen in outbreaks of strangles. In the same outbreak you might get cases where suppuration was absent. Some patients would have laryngitis and pharyngitis, some would show purpura-like symptoms, others would have a pure pleurisy and yet all the types of disease originated in the same infection.

With regard to cats he knew of a family of cats consisting of the old mother, her son, an adult Tom, and two kittens two months old. The Tom took what was apparently a cold. He had sore throat, coughed and sneezed and was off colour for a week, and then recovered. The two kittens caught the malady and displayed the classical symptoms of distemper—discharge from eyes and nose, vomiting and diarrhœa, ulceration of cornea, both died. Then the old mother cat was very ill. Cough difficult, breathing inappetence. She also died.

Post-mortem. Serofibrinous pleurisy. I am confident that these animals owed their illness to the same infection.

On the motion of Prof. WOOLDRIDGE, seconded by Mr. PRICE, it was decided to adjourn the discussion until the next meeting.

Mr. WILLETT proposed, and Mr. Perryman seconded, a vote of thanks to those gentlemen who had produced specimens, the same was carried, and the proceedings of the meeting terminated.

HUGH A. MACCORMACK, Hon. Sec.

VETERINARY MEDICAL ASSOCIATION OF IRELAND.

The annual general meeting was held in the Gresham Hotel, Dublin, on Thursday, Jan. 30th. There were present, Mr. P. J. Howard, in the chair; Messrs. Magee, Hare, Watson, Wilkinson, Barlow, Heney, Mahony, Doyle, McCann, McKenny, Reavy, Cargill Patrick, Holland, and Profs. Craig and O'Connor.

The minutes of the last general meeting having already been circulated amongst the members were taken as read and signed.

Letters of apology for inability to attend were received from Messrs. Thompson, Ashe-King, Healy, Chambers, Kerr, Moffett, Jordan, Ross, McGuinness, Preston, R. H. Lambert, Small, Col. Moore, and Professor Mettam.

A letter was received from Mr. Ashe-King resigning membership. His resignation was accepted.

A letter was received from Mr. Jordan, Belfast, resigning membership. The Hon. Sec. was directed to write asking Mr. Jordan to reconsider his resignation.

The minutes of the last Council meeting were read, as follows:

A Council meeting of the V.M.A.I. was held in the Royal Veterinary College, on Friday, Jan. 10th, 1913. There were present: Mr. Dunlop in the chair; Messrs. McKenny, Mahony, and Magee, and Professors Craig and O'Connor.

Apologies were received from Messrs. Patrick, Norris, Chambers, Wilkinson, and the President—Mr. Howard.

Minutes of the previous meeting were read confirmed, and signed.

Mr. J. H. Carr, of Valetta, Kingstown, was proposed by Prof. Dunne, and seconded by Prof. O'Connor for election.

Messrs. Shearman, Kilkenny, and Fitzgerald, of Tipperary, were proposed for election by Mr. Howard, and seconded by Mr. McKenny.

It was decided to hold the annual general meeting on Thursday, Jan. 30th, at 6.30 p.m. The Dolphin Hotel to be selected if available for the dinner. It was resolved that the meeting be followed by a dinner at a cost of 5/- per head exclusive of wines. Evening dress to be worn. Mr. McKenny and Prof. O'Connor to make arrangements for the dinner, Mr. Heney to be asked to arrange the musical programme. A sum not exceeding two pounds to be allocated from the funds to go towards defraying the cost of the dinners of any musical friends he may invite.

Arrangements were made for the annual election of officers and Members of Council. In addition to those eligible for re-election without nomination, the following nominations were made by the Council. Vice-President, Mr. B. P. J. Mahony; Council, Messrs. Watson, Doyle, Barlow, and F. C. Ryan. The Hon. Sec. and Treasurer unopposed, The President for 1912, Mr. Howard, was returned unopposed.

The following accounts were passed for payment:—Medal engraving 2/6; printing 16/-; clerical assistant half-yearly stipend £5; secretarial expenses, postage, etc., £2 6s. 11d.; reprints 8/-.

Arising out of the minutes, there was a discussion as to the wearing of evening dress at the dinner, some members considering that the price of the dinner, 5/-, did not warrant the wearing of evening dress. It was resolved that the Council be asked to consider any alteration necessary in Rule 39 relating to the annual dinner.

The HON. TREASURER then submitted the balance sheet.

J. F. CRAIG; in account with the Veterinary Medical Association of Ireland.

Dr.	£ s. d.	£ s. d.
To Balance from 1911 ...		27 15 10
Subscriptions, 1912 ...	33 16 6	
Arrears paid ...	12 14 0	
Payment in advance ...	10 6	
		47 1 0
Three dividends received		3 3 3
Invested in Consols £80 2 7		
„ India 3½ 25 1 3		
Bursary account 40 0 0		
£145 3 10		
		£78 0 1

Cr.	£ s d.
By Transfer to Bursary account ...	16 7
Reporting meetings	8 8 0
Audit Fee	1 1 0
Secretarial Expenses, Assistant ...	10 0 0
Printing and circulating proceedings	4 8 0
Postage—Secretary and Treasure ...	2 11 11
Stationery and General Printing ...	2 16 9
Hire of Rooms	1 10 0

Delegate to R.S.I., York ...	1	1	0
Contribution to Annual Dinner ...	2	0	0
Victoria Veterinary Benevolent Fund	2	2	0
International Veterinary Congress	10	0	0
Cheque Book		2	1
Balance	31	2	9
	£78	0	1

Bursary Account to Jan., 1913.

1912.		£	s.	d.
Jan. 1.	To Balance	45	11	4
Dec. 31.	Proportion of Interest ...		16	7
		£46	7	11

Dec. 31, 1912.	£	s.	d.	£	s.	d.
By Engraving Three Medals					7	6
Balance ...	40	0	0			
Included in Bank	6	0	5			
				46	0	5
				£46	7	11

Jan. 23rd, 1913. Examined and found correct.
JOSEPH H. WOODWORTH, F.C.A.

Prof. CRAIG (Hon. treasurer) said: You have copies of the balance sheet, and I just wish to refer to one or two matters. In the general account the balance over is £27 15s. 10d.—rather a good little sum to have in bank for the purposes of the Association. Then there are the subscriptions for 1912. I think there are 120 members of the Association who subscribed for 1912 £33 19s. 6d. of this sum, 67 or 68 members pay their subscriptions annually to maintain the Association, not only for themselves but also for other members. It is rather a pity that all members do not pay earlier, so that we might have a larger account and be able to do better work. There are three dividends from investments. Last year four were included in the balance sheet. This year only three. That is due to the illness of one of the trustees. I am sure you all very much regret the cause of the omission of this little sum. It does not matter so much for the sum itself.

Refer to the other side of the account and you will see that we have given £10 to the International Veterinary Congress. For the hire of rooms you will notice £1 10s. put down. The hire of rooms in 1911 was not paid, and had to be put in this balance sheet. Although the balance is good you will notice that the balance from 1911 was £31 2s. 9d. and when compared with this year's there was only a difference of about £3. The reason they had not a larger credit balance was because of the amount they had given to the International Congress.

With regard to the Bursary Account a little explanation may be necessary. The money was invested in Consols and the dividends from it were devoted to the paying for medals. You will notice on the credit side there is put down the engraving of three medals. The reason for that was that the engraving of two medals was not paid in 1911, but was included in this year's sheet. I think these are all the items that I need refer to. The only thing I wish to draw your attention to further is the question of subscriptions, and I hope there will be a larger number during the current year.

The CHAIRMAN: You have heard the statement of the Treasurer and what has been done with the funds. Is there any gentleman who has any criticism to make?

Mr. WATSON: Mr. Holland is the Lloyd George of the profession. (Laughter).

Mr. HOLLAND: I think that name could be more appropriately applied to the Treasurer. (Laughter.) I move that the report be adopted.

Mr. MCKENNY: I second that.

The motion was agreed to.

The following new members were unanimously elected: Messrs. CARR, of Kingstown; FITZGERALD, of Tipperary, and SHEARMAN, of Kilkenny.

ELECTION OF OFFICERS.

The Ballot resulted in the following Officers being elected for the year 1913:—

President.—Mr. P. J. Howard, unopposed.

Vice-presidents.—Messrs. W. C. Patrick and R. H. Lambert, re-elected.

Hon. Treasurer.—Prof. Craig, unopposed.

Hon. Secretary.—Prof. O'Connor, unopposed.

Members of Council.—Messrs. J. B. Dunlop, B. P. J. Mahony, W. H. Wilkinson, J. H. Norris, and A. Watson.

The meeting then concluded with a vote of thanks to the President and Officers for the year 1912 for their services during the year of office, which was suitably replied to by the President, after which the members present attended the Annual Dinner.

THE DINNER.

Mr. COYLE proposed the toast of the Veterinary Medical Association of Ireland. He referred in terms of praise to the great assistance which the members of the veterinary profession had rendered to the Department, and their willingness at all times to do what they could to assist the Department. He also referred to the Department's scheme of veterinary dispensaries. Now the West of Ireland were able to avail themselves of the services of qualified practitioners, which before had been impossible, and the natives had had to be content with the services of the so-called "cow doctors," they were realising the advantages to be gained by calling in the veterinary profession, and were not slow to avail themselves of this privilege.

Messrs. MCKENNY and HOLLAND replied on behalf of the Association, and cordially thanked Mr. Coyle for the manner in which he had proposed the toast.

Mr. MASON proposed the health of the President, complimenting him on the manner in which he had carried out his duties during the previous year, and the valuable services which he had rendered to the Association during his year of office.

The PRESIDENT suitably replied.

Mr. MAGEE proposed the toast of "The Visitors."

Mr. J. D. COPE replied on behalf of the musical and other guests.

Mr. HENEY proposed the toast of the Hon. Secretary, and Prof. O'Connor suitably replied.

The health of the Hon. Treasurer was proposed by Mr. McKenny, and Prof. Craig replied.

The following contributed to the musical programme: Messrs. W. F. and J. D. Cope, Evan Cox, Jeffs, Cranbury, Clarke, and Rock; and the members of the veterinary profession: Messrs. Mason, Wilkinson, McCann, Doyle, Heney, and the President.

The Board of Agriculture, in conjunction with the Economic Ornithological Committee of the British Association for the Advancement of Science, are engaged on an inquiry into the food of birds, especially those believed to be injurious to farmers and fruit growers. Investigations are at present confined to the rook, the starling, and the chaffinch. The Board would be glad to receive the names of correspondents who are willing to send to an address which will be supplied them, specimens of one or more of these birds at regular intervals during the year. Correspondents are wanted from all counties in England and Wales

DIET DEFICIENCY AND DISEASE IN LIVESTOCK.

By FRAS. EVELYN PLACE, B SC., M.R.A.S.E., B.V.SC., M.R.C.V.S. M.R.I.P.H., etc, Veterinary Lecturer to the Department of Agriculture, South Australia.

A paper read before the Australasian Association for the Advancement of Science. Veterinary Section. Melbourne, 1913.

Gentlemen,—Highly as I esteem the honour of being invited to submit a paper before such a learned and erudite body as the Australasian Association for the Advancement of Science, and much as I appreciate the opportunity held out by that body to enable the veterinary surgeons of the Commonwealth and Dominion to foregather under the aegis of its patronage, I feel that as a comparatively new comer I should more fittingly assume the *rôle* of postulant at the feet of such Gamaliels than take upon me the robe of a teacher, and it is in this frame of mind that I venture to occupy your attention for a short while with some of the aspects presented by the connection between Diet Deficiency and Disease in Livestock. Some of the phenomena attracted my attention many years ago, during dry summers upon the moors of Devon, but during the Indian famine of 1904 and 1905 I began to collate certain symptoms, and to assign to them in my own mind a chemico-physiological importance in the conditions which prevailed among the livestock in the famine stricken desert of Rajputana. Upon my arrival in Australia some three years ago, I found in Victoria and South Australia that the minds of stockowners were being exercised over similar if not identical problems, quaintly named in the latter state "Dry Bible," and "Coasting," while Tasmania and New Zealand meet with trouble, possibly more akin to the English forms, in "Midland Disease" and "Bush Sickness," and South Africa joins in with Lamziekte and Stieffziekte. In the face of all of them the veterinary profession has unfortunately to admit its ignorance of the causative factors, and has to adopt empirical remedies, such as bone meal, and to endure a certain amount of scorn from the ignorant and unscientific who "know all about it," while the profession is still delving amid the mass of contradictory report and confusing symptoms in an earnest, and I hope soon to be successful endeavour to elucidate the reason of phenomena noticed.

If I may be allowed I would revert for a few moments to a number of diseases which affect ourselves, and which I may refer to as belonging to groups such as the beri-beri, the scurvy, and the pellagra groups, and which are recognised by a large and increasing number of scientists as yielding to suitable diet, and I would class myself among the believers that they are caused by deficiency of certain food elements, the absence of which has a marked and serious effect upon tissue metabolism in nerve, muscle and bone, a group of organs which compose about 60 per cent. of the bodies of our domestic animals, and which hitherto have received more attention from the breeder of livestock than from the veterinary surgeon, if we omit those which build up the legs of an horse, in which the Psalmist warns us not to put our trust, plainly with prophetic vision foreseeing the advent of motor traction, and its effects upon the income of the veterinary practitioner.

SYMPTOMS.

For a moment I will briefly sketch the symptoms of beri-beri as I have seen them occurring in some poor wretch who has vainly been endeavouring to keep body and soul together upon a handful of mouldy, weevilly rice; and then I will try and draw a parallel from a horse dying in the ninety mile desert.

The patient loses weight till he is reduced to a skeleton, œdema, contractions, paralysis and anæsthesia of the limbs, marked nervous symptoms, due apparently to degeneration of the peripheral nerves and those of the heart muscle, followed by death, or recovery without any treatment beyond a change of locale, with most probably important additions to the defective diet. So much for the human animal, now for the equine: the collar grows too large, fresh holes have to be punched in the girths, the legs swell and the spur vein fills, he trips and totters, and without notice collapses on the sand without a groan or struggle, with spume at the nostril and nought but hide upon his ribs.

Or look for a moment at a case of scurvy with its anæmia and cachexia, its local hæmorrhages and hæmorragic inflammation, the spots upon the ribs, their dislocation from the cartilages, with perhaps neuritis and anæsthesia of the limbs; and compare it with a "coasty" heifer, with her bloodless eyes, and bottled jaw, her gaspy breath, due to her ribs failing to distend, her tottering walk and swollen fetlocks, and finally her feeble helpless efforts to control her limbs and raise her wasted carcase.

Is not one justified in asking: Are these mere coincidences or is there not a closer connection? For my own part I think there is, and it is interesting to note how veterinary surgeons have accepted and rejected the same theories with regard to this class of disease, as have members of the sister profession, though they have worked apart: Intoxication, Auto-intoxication, Infection, and even the Photodynamic theories, like ancient dynasties, have risen, held their sway and gone, while now the deficiency theory has been hinted at by Theiler, Gilruth, and Aston, though but tentatively, and as through a glass darkly. For to us the proteid has been a mass, a pyramid viewed in the mist of early dawn, and in the noonday heat its building stones have but afforded us shelter while we slept, their individual characters, their cryptic signs are still to seek, and perhaps at eventide there shall be light.

The cow with her hide-bound belly, and stiff stretched neck chewing the bones of some less lucky mate has suggested the want of phosphorus, and kindly consideration has provided a bone meal lick, but is not this significant of a certain amount of rough and ready argument forced upon the veterinary surgeon by the pressing need of staying the plague, and is it not characteristic of a certain roughness in feeding experiments which have been carried out. We see the proteid, the carbohydrate, and the fat—the tricolour which proclaims the revolution—but we are deaf to the groans, the gabelle raises, we think the miller but dips out a negligible mite, we wonder when red ruin racks our state, we fail to miss the amides of our meadow hay, we ignore the subtle ethers which scarce move our chemists' scale, and wonder when our beast falls, never to rise again.

Led by the chemist, whose accuracy far exceeds our own, we have framed standard diets with correct nitrogenous ratios, we have carefully balanced the income and the outgoing, at least in theory, and our American cousins have also in fact, in some careful series of experiments, especially those carried out at Wisconsin, without success. Here in Australia we have no data for the composition of our common feed stuffs, we know less about them than we do of the component parts of a German sugar beet or an Indian millet, and our ignorance falls upon our own heads in the nemesis of "dry bible" and "coast." South Australia at least is endeavouring to lift the veil of this darkness, but many years must elapse before the observations and experiments now being carried out at the Agricultural College, Roseworthy, can be finalised, though from time to time parts of them may be available. Up to now we have no

Australian analysis of Cockie chaff or wheaten hay, our grasses and native clovers are unknown quantities, but when we seek them out we must remember that calorie figures are incomplete records of the value of a food stuff, and that the innate metabolism of a grain has a physiological value which we cannot weigh or count in figures. In short that the feeding value of any food is based upon a most complicated chain of factors each dependent on the other, till the mind becomes dazed at the number of combinations any one series may present.

The appearance of the stock in the dry districts of South Australia leads one to think that a very large amount of feeding value of their forage is expended in maintenance—more than the five-twelfth's of Kellner's observations. Even those which are keeping their condition give one the impression that too great a proportion of their energy is expended in managing to live: to use a feeder's expression they have no "bloom," or in butcher's terms they "kill light." A somewhat extensive acquaintance with these beasts in the slaughterhouse supports this idea; their musculature is devoid of intermuscular fat, and its water content is far too high proportionately, so they shrivel when they set, and resemble biltong more than beef, and when canned their gravy is gelatin rather than jelly.

A high proportion of this class of beast has an acid reaction with the urine, which is also the case in "dry bible," and in some forms of "coast disease," anent which it is interesting to recall the note in Smith's Physiology, "When the herbivora are starved their urine gives an acid reaction." Now as physiologists we must look further than the kidneys and bladder for the origin of this change, and we find it no doubt in the muscles. This is not the place, nor if it were, would time permit to go into detail as to chemical changes in the muscles, but it is worth noting that they become strongly acid in reaction when the call upon their endurance is excessive, either as labour or as deficiency in nutriment. In this connection we must call to mind the fact that food deficient in nutriment not only fails to nourish but also lowers the digestibility of nutritious food fed with it, so that large feeds of straw chaff with a modicum of inferior wheat such as form the standard diet of many horses do not conform to the requirements of their system, even when liberally diluted with sand, nor are they calculated to produce meat or milk.

At first glance the analysis of certain straws does not show them to be entirely unsuited for use as food, but wheat straw seldom shines out well, Kellner's figures being—water 13·6, nitrogenous substances 3·3, fat 1·3, soluble carbohydrates 39·4, fibre 37·1, ash 5·3, with a digestibility of less than a third of its weight, and this is the diet on which a large proportion of Australian stock are supposed to find their nourishment.

For an analysis of wheaten hay we have to go to America, and it is by no means improbable that the analyses made there are those of a fodder differing in many effective elements from the same substance here, but it shows a marked improvement in the nutritive ratio, and reveals the fact that cockie chaff probably saves the situation. It is to be hoped that the Roseworthy experiments and observations will set this matter more clearly before the feeder. The careful study of the analysis of the common fodders in use in Australia is of value, but analysis alone is most misleading, digestibility is a better guide, but assimilation is not synonymous even with this, as the appearance of stock on such country, where undoubtedly they are digesting a fair proportion of what they eat, clearly shows, for frequently a change to land which does not seem so good brings about an alteration for the better. When dealing with a metabolism in the tissues we are dealing with only a limited series of factors, metabolism in the fodder itself while growing, and after cutting and while in store, to say nothing of the natural action of the enzymes of the digestive juices in partnership with those of the fodder, are all issues which have to be studied both alone and in conjunction.

In Australasia livestock present the symptoms of the great groups of deficiency diseases observed in man, the beri beri group is typified by the so-called epizootic paralysis, and the disease in horses where the collapse is so sudden that death may occur upon a journey without warning, reminding many who went to the war in South Africa of the fatal horse sickness prevalent in that country, whose lamziekte and stiffziekte have their counterparts here in neat stock as "coasting" and "dry bible." The scurvy group appear in horses, cattle, and sheep in forms widely known, but generally receiving local and often unmeaning names such as "crankums," rheumatoid arthritis, and so on. The pellagra group also have their counterparts in skin and stomach lesions, in the central and northern districts of Australia, the Midlands of Tasmania, and the North Island of New Zealand, a chain of tracts which have in common scarcely any climatic or botanic similarities, which fact almost forces on one the necessity of falling back upon physiological resemblances.

Fagopyrismus in cattle, and epizootic paralysis in horses naturally turn the thoughts to the study of the balance of metabolic factors and their influence on the major physiological processes in livestock, because they are instances of the disastrous effect of very slight alterations in those balances. Among physicians, one school scoffs at the laboured triturations of the other, which in turn smiles in pity upon the germ bespangled broths and jellies of the first, and both in turn are the sport of yet a third party which, while deriding drugs or sera, agitates the public mind with the desire for frequent change both in venue and diet to say nothing of habits and thought, and between them nature waves her wand and produces:—eggs and cream, lamb chops and Murray cod, strawberries and apples, ale and tea—all just proteids, carbohydrates, fats and water, yet every one distinctly different, and pleasing in their variety. Their distinctive characters are to a great extent amides or amido-acids, almost negligible from an analyst's point of view, but recognisable by the working bullock that suddenly pulls up to crop some succulent weed by the roadside, or the colt which browsing by its dam picks off the dainty tops that please its palate, and even the farmer seeks for them when at this time of year he bemoans the fact that pastures, so good three months ago are not able to carry the stock now, though, minus the water, the crop upon them is probably weight for weight richer in proteids, etc., than it was then.

And here we must pause a moment to consider an important factor which probably has much to do with deficiency in Australian fodder, namely, the fact that plants grown in dry heat are deficient in many of their natural amides; that when present these undergo metabolic changes which render them unadapted to the use of stock—a fact unpleasantly forced upon my notice some few years ago in Burma by the untimely and numerous deaths of ponies fed upon *phaseolus lunatus* and similar legumes grown in a dry district, while lower down in the moister parts the same plants were fed regularly without harm, and I have no doubt that the contradictory reports about Soya beans in England arise from the conditions under which they have been grown, in spite of the similarity of the analyses in all such cases.

Recent investigations by the Commonwealth Statician have demonstrated the curious effect upon the birth and death rate of varying quantities of moisture in the atmosphere, as applied to man, and the practical farmer daily demonstrates the same thing in his movements of stock, while the creek and the waterhole seem to be the determining factors in the utilisation of the amides in the fodder, illustrated by the saying I heard some thirty

years ago in the Riverina, that "if the sheep could have a blade of grass one day and a drop of water the next, they could weather through the drought, but with the grass alone they could lie down and die."

Research has demonstrated that in the large nerve organs as well as in the peripheral nerves of animals that have starved, or in the polyneuritis of pigeons, and in the impaction paralysis of cattle, there is a marked deficiency in the normal phosphorus content of those organs, despite the fact that phosphatic content of their food has been ample, and one knows how very disappointing from a therapeutic point of view the administration of phosphorus proves to be in many cases, while in others it seems to act like a charm. A series of analyses of the phosphorus contents, both actual and relative, of the otoliths in paralytic stock would probably illuminate the obscurity of many of the symptoms.

When one considers that the caloric energy of bad grass hay as compared with good grass hay is very little more than half, and that five-twelfths of the amount of food eaten has to be used for maintenance, also that the wastage of bad hay is double that of good, and that the more inferior the fodder is the greater the depression of digestion, also that when in conjunction with these factors they are all intensified if the water supply is insufficient, one is bound to consider that under some Australian conditions livestock must be chronically upon the verge of starvation, which as a matter of fact is just the impression that I gained when first studying these conditions, although an absence of thirteen years from England and an extensive acquaintance with the appearance of stock in India under famine conditions should have familiarised me with the symptoms of existence under such disadvantages. One notices that when phosphorus is available, as when bone meal is given, that the nerve lesions are minimised, but that the appearance compatible with bloom and health are only restored when natural fodder in an actively growing stage is to be had, unless one makes an exception in the case of stock receiving ensilage, a form of nourishment in which, if the natural amides have undergone change, their place is taken in some degree by ferment products nearly allied to them. In this connection one's mind reverts to the empiric remedies of currants and yeast, the administration of which is undoubtedly followed by a measure of success in this class of disease which cannot fairly be attributed to a merely mechanical action upon the ingesta.

One other point must be called to mind before we commence to collate the clinical facts we have been considering, and that is the frequency with which enlargement of the thyroid is met with in the class of disease under consideration, one finds this in all classes of stock —colts, calves, mares, geldings, cows, and steers, a list which excludes those whose generative organs are immature, or male animals, which as a rule are fed with a diet of superior order.

It may be that from a clinical point of view I have not brought forward sufficient evidence to convince many that we are dealing with groups of disease resulting from diet deficiency—that is deficiency in some essential necessary for the normal physiological processes, diseases that may still be regarded by many as intoxications—a view I must confess I still have a hankering after, although my faith in it is daily being undermined by the contradictory and inexact statements which are constantly being put forward with a view to make its position more tenable: but we have the fact that these deficiency diseases break out in countries where a certain unvarying diet is partaken of for long periods, while near by, stock seem to be exempt from their attack, due no doubt to some minute alteration in the diet which contains the necessary protective bodies.

As I have already alluded to the similarity in the course of the symptoms, I may here merely remark that the most prominent ones are found in all the diseases we are considering, namely a general cachexia with enormous loss of weight, marked nervous symptoms, due most probably to degeneration of the peripheral nervous system, centripetal rather than eccentric. And roughly we know that all these diseases can be prevented by the addition of certain substances to the food, and in some cases, when the disease is not too far advanced a cure may be hoped for.

In the case of human diseases these substances are known to be organic bases and are termed "Vitamines." Those of the beri beri group are the scurvy group, being well recognised and to some extent being interchangeable, though not always. Although veterinary research has not yet gone thus far, veterinary clinical observation, which I believe I may justly claim as being keener than that of the sister profession, has supplied the missing substances in crude form—bone meal, ensilage, cattle spices, and so forth; while the beans, always considered necessary for muscular growth and fitness in training stables, supply the vitamines in profusion. Facts that Gryns and Eykman applied to the treatment and investigation of deficiency diseases, and which Worth and myself experimented with in Burma, finding that the protective substance is soluble in strong alcohol and effective even after the elimination of alcohol soluble proteids. The fact that the phosphorus content of some fodders acted as an index to their harmfulness or otherwise, suggested that probably there was a deficiency of certain organic phosphorus compounds in the food, which has sufficed for Schaumann to construct his phosphorus deficiency theory.

Investigation has proved that the protective substances, whichever they may be, are: Soluble in alcohol, in acidulated alcohol, and water. Dialysable. Destroyed by heating somewhat above 100 C. They are neither salts nor proteins. They are easily destroyed by chemical manipulation, and on this account have most probably escaped the observation of earlier investigators.

Funk concluded that owing to the stability of certain substances from yeast in acid solution these protective substances are probably nitrogenous, of simple chemical nature, and belonging to the group precipitated by phospho-tungstic acid, and tracked them down till he obtained a compound with the formula C_{17}, H_{20}, N_2, O_7. The quantity of this substance present is extremely small, 1 kg. yielding only 0·5 grm. and the curative dose was found to be very small indeed, but varying with conditions of nerve degeneration and subsequent diet, resulting in some critics considering the substance to be merely an activator, a member of the group of hormones. Subsequent investigation however upsets this theory and gives rise to another—that the neuritic symptoms of starving animals are dependent not only on phosphorus deficiency but also on nitrogen deficiency in the nerve organs, and that in the absence of the vitamine the organism cannot synthetize its nerve elements, and so deficient metabolism ensues and death results. Here the yeast and currants of the empiric tell.

Vitamine is necessary for the metabolism of the nervous tissue, and its lack forces the animal to take this substance from its own tissues. The result is enormous loss of weight, and when the available stock begins to run short there is a breaking down of the nerve tissue, with the resulting symptoms, among which, in the south-eastern parts of South Australia, is the form of epidemic dropsy so reminiscent of the so-called wet beri beri.

I have already drawn the parallel between some forms of "coast" and scurvy, the latter being so prevalent on a diet of starch and preserved food, and yielding so easily to lime juice and fresh fruit and vegetables, especially onions, as I, after some months on boiled milk and brandy, have reason to be thankful for. The prevalence of scurvy of the gums is responsible for

many of the dental troubles which supervene on the attentions of quack horse dentists, and is possibly the reason for the existence of these operators.

One of the symptoms of this form of disease in cattle in South Australia is a blue hyperæmia of the gums, and in some instances ulceration, which have misled me into imagining I had lead poisoning to deal with, until undeceived by chemical analysis. In human scurvy only fresh food possesses the protective power, dried material is entirely valueless, but lime juice apparently is possessed of a greater quantity and that more stable, and offers a promising therapeutic remedy for stock.

In the process of germination, seeds are known to develop all kinds of enzymes in order to utilise their food reserves, and grains such as oats develop an anti-scorbutic agent after they have germinated, but they lose this power when they are dried again. This is also true when the process of ripening is not completed, so that the shrivelled wheat in Australian hay is probably unable to carry on this process even although its nitrogen content is high.

Infantile scurvy is not uncommon in factory-fed calves and pigs receiving waste milk which has probably been preserved by heat. Although the vitamine in milk is stable it is destroyed by heat, the extent of its destruction depending on two factors, the temperature and length of time of heating. Further factors, says Funk, in a passage which is pregnant with importance to Australian dairymen, are :—The reaction of the milk, the natural content of vitamines in the cow's milk, which of course depends entirely on the content of vitamines in the cow's food—and so far we know nothing about them, except the financial loss such ignorance entails

All the symptoms of the disease we are considering can be produced in miniature in guinea-pigs—the loss of hair and weight, the paralysis of the hind legs, and catarrh of the intestines—by a deficient diet, deficient not in quantity but in protective substances. And their blood is sterile, like those other beasts we deal with. The results of modern investigations in deficiency diseases are not well known to physiologists, and are practically unknown to veterinarians. Though Mandel and Emil Fischer have long ago forecasted the results at which we are arriving, and have pointed out that these substances protective have been too easily overlooked.

In the metabolism experiments performed with a view of determining the nutritive value of different proteins the question of vitamines has not been considered, but if they are not present, even though the nitrogen content is high, the animal wastes and fails, and in future experiments they must be carefully considered. Abderhalden's experiments in feeding dogs with their own proteins, and his rather too premature conclusion that the question of artificial food is solved, have their value in calling our attention to the length of time an animal can survive upon its own tissues or those closely allied to them, and enable us to understand how the famine cow survives upon dried dung cakes or the "dry bible" beast on mummified rabbits that have succumbed to phosphorus in overdoses.

Many years of careful work are still before us before we know much about vitamines, and similar protective substances, but my purpose will have been served if by these few observations I have succeeded in arousing among my professional brethren a fleeting interest in them, for it is quite possible that their importance is much greater than has been hinted at in this paper, and a predisposition to many other diseases may be due to a deficiency in these protective substances.

We shall see the whole importance of these protective bodies when we know for what purpose these small quantities of substances are required in the animal organism. It is obvious that the minute amount necessary cannot be considered from the point of view of food, unless they are the ambrosia and nectar of the ferments and hormones, or the favoured vintages of the internal glands, such as the thyroid and pituitary.

The further investigations of vitamines, the knowledge of their chemical composition, and their fate in the animal body should help to eliminate from veterinary phraseology such classic terms as Dry Bible, Enzootic paraplegia, Coasting, and other high or low sounding titles which mean nothing, and only serve to raise a smile upon the faces of those who deem we are endeavouring to hide our thoughts in words.

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Foot-and-mouth Disease.

The House of Commons on Feb. 8th went into Committee of Supply on the Supplementary Estimates, Mr. Whitley in the chair.

On the vote of £63,572 for the salaries and expenses of the Board of Agriculture,

Mr. Hugh Barrie moved a reduction of the vote by £100 for the purpose of raising a discussion on the action of the Board in regard to the outbreak of foot-and-mouth disease in Ireland. He complained that the action of the Department had seriously prejudiced and imperilled the Irish cattle industry. The final blunder—that of imposing an embargo on Irish cattle for twelve hours at English ports—must have the effect of permanently discrediting the industry, and he urged the President to restore to them the free trade in cattle which they had a right to claim. They were willing, if it was thought necessary, that the short detention on the other side of the Channel should be increased. So anxious were they to restore confidence in the trade, that they would welcome the best experts of the Department being sent over to Ireland to co-operate with the Irish inspectors, and make inspection doubly secure.

Mr. Field said opinion in Ireland was solid against this twelve hours' detention in England. He suggested the appointment of an Advisory Committee, with a view of ensuring unity of action between the English and Irish Boards.

Mr. Munro-Ferguson thought the recent losses due to the outbreak would be a blessing in disguise if they taught Ireland to develop the feeding of cattle instead of sending her stores to England and Scotland.

A remark by Mr. Munro-Ferguson expressing lack of confidence in the regulations of the Irish Department provoked a protest from Mr. T. W. Russell (Vice-President, Irish Board of Agriculture), who asked for specific instances. Mr. Munro-Ferguson said he was not prepared to give specific cases.

Mr. Russell: Then I do not think it ought to be said.

Mr. Munro-Ferguson said he thought it ought to be said, because there was no doubt it represented the feeling which prevailed among British agriculturists.

Mr. T. W. Russell claimed that the prompt and severe steps which the Irish Department had taken at the commencement of the outbreak had saved us from the disaster of the disease spreading all over the country. There was not the slightest possibility of the Department accepting the suggestion that there should be an Advisory Committee formed. In a matter of this kind absolute promptitude was essential, and an hour's delay might be vital. With regard to the suggestion of Mr. Barrie that half a dozen English inspectors should be sent over to Ireland for the purpose of joint inspection in Ireland as a means of restoring confidence in English minds, he was not sure it would have that effect. There was an enormous trade, and his staff simply laughed at such an impossible and impracticable proposition. Moreover, he was not willing to consent to such an implied censure on his Department. The Irish inspectors had not failed him at the crux. Since the first outbreak at Swords nearly a million head of cattle had passed over the Channel, and not a single case of foot-and-mouth disease had been detected at any English port. That was good proof of the perfection of the organisation of the Irish Department, ably backed up, as it was, by a police force superior to the police of England and Scotland. If the outbreak was dealt with in a way that had cost much, it was also dealt with in a way that had saved much.

Mr. Runciman (President, Board of Agriculture) said there was no doubt that from the first English Board of Agriculture had been the centre of conflicting interests, and in the midst of these conflicting interests the Board had to form its own opinion and take its own course. He had found himself in conflict with great local authorities in Great Britain. The county councils were much more alarmed than any other section, and when they thought he was acting recklessly in relaxing the restrictions, they continued their additional restrictions, because they thought he was going too far in the Irish interests. These difficulties had not lessened, but he believed that at the present time Great Britain and Ireland were freer from any form of cattle disease than in any other country in the world.

If that had not been the case, it would not have been possible for the Board to relax the restrictions so rapidly. A bad impression was created in England by the endeavour of the hon. member for North-East Cork (Mr. T. Healy) to belittle the outbreak. The Departments regarded that as a great calamity, not only for Ireland, but for England. He hoped presently to be able to publish a full report of all the cases, so that the House could judge whether the Board had acted properly. Before he issued the Order on January 28th, he was advised by some people in Ireland that twelve hours' detention, or at any rate some detention and inspection at English ports, would be good and could do no harm. He was also informed by everyone in England that without inspection here confidence could not be restored in the Irish trade.

It had been suggested that the twelve hours' detention was superfluous, but it had enabled the Board's inspectors to detect the existence of other diseases as well as foot-and-mouth disease. They had had some experience of the system, and though they had not come across a single case of foot-and mouth disease they had come across cases of animals which had run the gauntlet in Ireland appearing over here with another disease. Sheep scab had been found in large numbers of animals landed on this side. Only two days ago three new cases of sheep scab were found at Birkenhead. That was a justification from experience of the necessity of inspection at the ports on this side. There was ample accommodotion already at all the existing lairages for 34,000 cattle per day, and the average number coming from Ireland was between 34,000 and 35,000 weekly. The charges varies from 1/- to 2/- per head, and the Board would take care that the charges were not excessive.

The motion for reduction was negatived by 142 to 7, the figures being received with derisive laughter. The vote was carried by 141 to 6.

Prosecutions by the R.C.V.S.

William Petchell, of Exton's Road, Lynn, was summoned on the information of Cornelius Gore, on behalf of the Royal College of Veterinary Surgeons, for falsely pretending to be a veterinary surgeon on January 25. Mr. G. F. Carr (Messrs. J. A. Parsons and Carr) appeared for the prosecution, and handed in College Register, which, he said, did not contain the defendant's name.

Cornelius Gore, retired inspector of police, said he visited defendant's house on January 25, and saw on the door of 26 Exton's Road' on a white plate the words "W. Petchell, Veterinary." Witness added that the man had been practising to the best of his skill.

Defendant said that the plate was not put on with his consent and he latter asked the man who put it on to take if off. It would have been removed earlier but for the man's illness.

Mr. Carr: Would it not have been better to have had it off before you got into trouble?—I didn't know I should get into trouble or I should have had it off. Defendant was fined £2, with 8s. 6d. costs.—*The News and County Press.*

"Canine Surgery"—Summons Dismissed.

At Llandaff, on Monday, Feb. 10th, Albert Edward Kennard, of Llandaff North, was summoned at the instance of the Royal College College of Veterinary Surgeons, the charge being that he, "not being on the Register of Veterinary Surgeons, and not holding at the time of the passing of the Veterinary Surgeons Act, 1881, a veterinary certificate of the Highland and Agricultural Society of Scotland, did unlawfully use and take an addition and description—to wit, "canine surgery"—thus stating that he was specially qualified to practice in a branch of veterinary surgery, contrary to Section 17 of the Statute." Mr. St. John Francis Williams appeared to prosecute, and Mr. A. T. James was for the defence.

Mr. Francis Williams said that on December 13th last a Mr. Howe, acting upon instructions, went to Mr. Kennard's residence, and found outside the house a red lamp with this inscription on it—"A. E. Kennard." He also found on the wall of the house a brass plate with a similar inscription. He was then shown into a room, where he had a conversation with Mr. Kennard. Mr. Howe told him he had a Persian kitten that wanted attention, and in answer to this defendant said the fee would be 7/6, adding that any ordinary veterinary surgeon would charge 5/-, but that he would charge 7/6 because he always used an anæsthetic. The allegation was that in regard to the inscription "canine surgeon," and the conversation in which he compared himself with some veterinary surgeons, he held himself out as qualified.

Mr. A. T. James contended that the description 'canine surgery" did not apply to the defendant himself, but to

the place where he carried on his business. He said the defendant was perfectly entitled to practice provided that he did not hold himself out to be specially qualified. Defendant, who gave evidence, said he was a boiler-maker for years.

The summons was dismissed with costs.—*South Wales Echo.*

The R.C.V.S. Register, 1913.

This year's Register has just been published. It is not noteworthy for the addition of new features, as its immediate predecessors have been, but the additions of recent years remain, and the volume fully maintains the high standard which we are now accustomed to expect from it. It contains a calendar, list of members, existing practitioners and officials, information regarding schools, prizes, and the conditions of entry into the various public veterinary services, and the written questions set in all classes of the professional examinations in 1912. Generally, it resembles last year's Register with the lists brought up to the present date.

One or two points arising from the revision of the lists are interesting. There are now 218 names on the list of "existing practitioners" as against 226 last year—a surprisingly small reduction, considering the ages these men must have reached. A more important point is the large number of qualified men whose addresses are unknown. No less than twenty-five names are listed under "Addresses wanted," and all these will be removed from next year's Register unless information concerning them comes to hand in the meantime. Those whose names are so removed will have no one to blame but themselves.

As is now usual, the Register is published by the R.C.V.S. at 10, Red Lion Square; and a copy may be obtained from the Registrar for 3/6. It is well worth the sum to every practitioner, for, in addition to its statutory function of stating the names and addresses of members, it now contains such a variety of professional information that it is both a useful guide—especially with regard to legal questions—and a really readable and interesting volume into the bargain. W. R. C.

The Curry-Herbert Meat-Curing Process.

We have personally had an opportunity of inspecting (and tasting) a portion of a silverside joint, cooked in the ordinary way by Mr. Hollis, of the Barley Mow, Long Lane, E.C. The original weight of the joint without bone was 17lb 6oz., and was cured in about three minutes, and cooked at once, on the afternoon of Thursday, 38th ult. On weighing it next morning (Friday) when cold, the weight was 16lb 6oz., or a loss on the original weight of only 5¾ per cent. As the usual loss in weight on meat cured by the old method is anything from 20 to 25 per cent., this great gain in weight of meat after cooking must appeal to all interested. The meat was of excellent quality, while its remarkably fine colour throughout made it exceptionally attractive. —*Meat Trades' Journal.*

[In this process, the brine is injected by the arteries]

DISEASES OF ANIMALS ACTS 1894 TO 1911, SUMMARY OF RETURNS.

Period.	Anthrax. Outbreaks Con-firm'd	Anthrax. Outbreaks Re-ported	Anthrax. Animals Con-firm'd	Anthrax. Animals Re-ported	Foot-and-Mouth Disease. Out-breaks	Foot-and-Mouth Disease. Ani-mals.	Glanders † (including Farcy) Out-breaks	Glanders † (including Farcy) Ani-mals.	Parasitic Mange. Out-breaks	Parasitic Mange. Ani-mals.	Sheep Scab. Out-breaks	Swine Fever. Out-breaks.	Swine Fever. Slaughtered. *
GT. BRITAIN. Week ended Feb. 15	15		16				6	9	90	160	11	25	218
Corresponding week in 1912	25		28				1	2	118	200	17	59	985
Corresponding week in 1911	23		27				6	55			30	39	459
Corresponding week in 1910		29		34			3	17			31	35	352
Total for 7 weeks, 1913	88		100				26	88	489	1320	79	238	2835
Corresponding period in 1912	177		202				17	37	1008	2483	108	427	5371
Corresponding period in 1911	155		172				35	135			215	252	2805
Corresponding period in 1910		208		246			46	153			214	157	1189

† Counties affected, animals attacked: Derby 1, Essex 2, London 5, Lanark 1.

Board of Agriculture and Fisheries, Feb. 18, 1913.

IRELAND. Week ended Feb. 15	...	...	...	...	...	...	Outbreaks 4	21	6	5
Corresponding Week in 1912 ...	...	...	...	...	...	...	4	19	1	6
Corresponding Week in 1911 ...	...	...	...	...	...	...	4	22	2	67
Corresponding Week in 1910 ...	...	...	...	...	...	...	1	22	1	59
Total for 7 weeks, 1912 ...	...	...	...	...	...	...	61	135	34	157
Corresponding period in 1912 ...	1	1	...	...	...	...	17	143	16	170
Corresponding period in 1911 ...	3	3	...	...	...	...	19	148	23	408
Corresponding period in 1910 ...	2	2	...	...	...	...	16	157	6	215

† These figures include animals slaughtered and found affected on post-mortem examination.

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Feb. 17, 1913

NOTE.—The figures for the Current Year are approximate only.

* As Diseased or Exposed to Infection

Donation to R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following donation to the College funds for 1913 from :

Mr. F. C. Hobbs, Newport, Mon. £1 1 0

ARMY VETERINARY SERVICE.

Extract from *London Gazette*.

WAR OFFICE, WHITEHALL, Feb. 14.

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Capt. (Hon. Vet. Lieut. in Army) W. S. Mulvey resigns his commission. Dated Feb. 15.

Col. E. H. Hazelton, A.V.S., embarked for India on 15th inst. to take up the appointment of Principal Veterinary Officer in that country.

Capt. W. N. Rowston has been granted three months sick leave of absence.

The undermentioned officers arrived from South Africa on 8th instant, and have been posted to the stations as stated :—Capt. H. Bone to Norwich, Capt. W. H. Taylor to Aldershot.

Lieut. H. C. Lowry, Special Reserve, has been granted twelve months leave of absence for the purpose of taking up an appointment with the South African Government in Rhodesia.

Lieuts. S. E. Holmes and D. R. Williamson, Special Reserve, will join at Aldershot for a three months course of instruction on 24th inst.

A. Rogerson, F.R.C.V.S.

Deep sympathy will be felt for the friends and relatives of Mr. Rogerson who was found dead in his bed early this week. For many years he has acted as veterinary surgeon to the Midland Railway Company, and had established a reputation for care and skill beyond the ordinary. As a regular attendant at the meetings of the Central Veterinary Society—of which body he was past President, and for long a member of Council—he often contributed from his store of experience. He first clearly demonstrated that all intestinal calculi are formed round a central foreign body. His loss of horses from calculi was so large that he advised passing all the oats over magnets to remove fragments of nails which became mixed with the grain on board ship. After this machine was adopted, deaths from calculi ceased. He was an expert on railway accidents to horses, and an authority on the methods of securing horses in railway boxes. Mr. Rogerson took great interest in the students at Camden Town, classes of whom he would take round his horse-infirmary. He frequently acted as examiner for some of the College prizes.

He will be remembered as a modest, genial gentleman of whom all his friends spoke kindly, and as a practitioner who took an unusual interest in his cases, and kept up to the times.

Lately Mr. Rogerson had trouble with his eyes and consulted an oculist, who diagnosed cataract in both eyes, and gave no hope of successful treatment. This seemed to have shocking depressed him, and at the inquest the following pathetic letter was read :

"I am rapidly going blind from cataract. Rather than inflict a blind father upon you, I prefer to end my existence. I cannot see my way to do my duty to the Midland Railway Company."

A. ROGERSON, F.R.C.V.S., Camden Road, London.
Graduated, Lond : Jan., 1881, F. 1890.

Mr. Rogerson was found dead on Monday morning. His age was 55 years.

JOHN REID, M.R.C.V.S., Wells, Somerset.
Glas : April, 1883.

Death took place on February 2nd, from pneumonia, followed by heart failure. Aged 53 years.

THOMAS BARKER, M.R.C.V.S, Ockley House, Stokesley, Yorks. Edin : April, 1864.

Mr. Barker died on Feb. 14th, at the age of 78 years, from cardiac disease.

By the death of Mr. Barker there is removed the last member of a family of veterinary surgeons well known and highly esteemed in the Cleveland district of Yorkshire for over two hundred years. One of four brothers, he studied under Professor Dick, and graduated at Edinburgh in April, 1864, and soon after came to London as assistant to the late Edward Coleman. After some years he commenced to practice at Guildford, Surrey, but soon returned to London. He bought a practice in Marylebone which he held for over 30 years. When he retired, about 13 years ago, he returned to his native town in Yorkshire where he lived until his death. Thus passes away one of the older school of veterinary surgeons, gradually becoming less in numbers.

The shops in Stokesley were all closed during the time of the funeral, and many townsmen were at the grave side showing a last token of respect to him.

Veterinary Societies—Addresses.

BORDER COUNTIES V.M.S.
Pres : Mr. J. W. Hewson, M.R.C.V.S., Wigton
Hon. Sec. (*pro tem.*) : Mr. F. W. Garnett, M.R.C.V.S., Dalegarth, Windermere
Meetings, Second Friday of Feb., June, and October

GLASGOW V.M.S.
Pres. Principal McCall.
Hon. Sec. Mr. J. Gibson, 16 Overdale Gdns, Langside, Glas

ROYAL VETERINARY COLLEGE M.A.
Pres : Dr. Lander, D.Sc.
Hon. Sec : Mr. S. Gorton, M.R.C.V.S. *Assist.* Mr. T. J. Davis

ASSOCIATION OF VETERINARY OFFICERS OF HEALTH
Pres : Mr. J. G. Reynard, M.R.C.V.S., Perth
Hon. Sec. & Treas. Mr. A. M. Trotter, M.R.C.V.S., Moore Street, Abattoir, Glasgow.

NATIONAL VETERINARY BENEVOLENT & MUTUAL DEFENCE SOCIETY.
Pres : Mr. W. A. Taylor, F.R.C.V.S., Brick-st, Manchester
Treas : Mr. J. B. Wolstenholme, F.R.C.V.S., Quay-street, Manchester
Hon. Sec : Mr. G. H. Locke, M.R.C.V.S. Grosvenor Street, Oxford-st., Manchester

VICTORIA VETERINARY BENEVOLENT FUND.
Pres. W. Freeman Barrett, Esq. Fountain Ct, Temple, E.C.
Hon. Sec. & Treas : Mr. W. Shipley, F.R.C.V.S. South Town, Great Yarmouth.

COLONIAL SOCIETIES (*continued next page*)

VETERINARY ASSOCIATION OF NEW SOUTH WALES.
Pres : Mr. S. T. D. Symons. M.R.C.V.S., Chief Inspr. of Stock
V. Pres : Major A. P. Gribben, F.V.O., M.R.C.V.S.
Hon. Sec. & Treas : Mr. Max. Henry, M.R.C.V.S., B.V.SC. (SYD) 56 Bridge Street, Sydney.

NATIONAL VETERINARY ASSOCIATION

Pres. Mr. William Hunting, F.R.C.V.S.
Sec: Mr. William Hunting, F.R.C.V.S. London, S.W.
Treas: Prof. G. H. Wooldridge, F.R.C.V.S.,
Ryl. Vet. Coll., Camden Town, N.W.

Northern Branch:

Pres, W. A. Taylor, (F) Brick Street, Manchester
Hon. Sec. A. W. Noël Pillers, (F)
74 Smithdown Lane, Liverpool

LANCASHIRE V.M.A.
Pres: Mr. G. H. Locke, M.R.C.V.S.,
Grosvenor-street, Manchester
Hon. Treas: Mr. E. H. Stent, M.R.C.V.S., Preston-st, Hulme
Hon. Sec. Mr. J. W. Brittlebank, M.R.C.V.S.,
Town Hall, Manchester
Meetings, 1st Thursday in April, June, Sept., & Dec.

LIVERPOOL UNIVERSITY V.M.S.
Pres: Mr. J. T. Share-Jones, F.R.C.V.S., University, L'pool.
Hon. Sec: A. Richardson, M.R.C.V.S., 111 Arundel Av., L'pool.
Pathological Sec: Mr. D. C. Matheson, F.R.C.V.S.
Meetings, May, July, October, January.

MIDLAND COUNTIES V.M.A.
Pres: Mr. W. H. Brooke, M.R.C.V.S., Handsworth
Hon. Sec: Mr. H. J. Dawes, F.R.C.V.S.,
Camden House, High-st., West Bromwich
Meetings, Second Tuesday, Wednesday, Thursday, and Friday alternately in Feb., May, Aug. and Nov.

NORTH OF ENGLAND V.M.A.
Pres:
Hon. Sec: T. T. Jack, M.R.C.V.S., 3 Elmwood Ter, Sunderland
Meetings, Third Friday, Feb., May, Aug. and Nov.

NORTH WALES V.M.A.
Pres: Mr. F. Booth, M.R.C.V.S., Colwyn, Denbighshire
Hon. Sec. Mr. L. W. Wynn Lloyd, M.R.C.V.S., Carnarvon
Meetings, First Tuesday, March and September

SOUTH DURHAM AND NORTH YORKSHIRE V.M.A.
Pres: Mr. W. Awde, F.R.C.V.S., Stockton-on-Tees.
Hon. Sec. & Treas: Mr. J. H. Taylor, F.R.C.V.S.
Grange Road, Darlington
Meetings, First Friday, Mar., June, Sept. and Dec.

YORKSHIRE VET. ASSOCIATION
Pres: Mr. J. Abson, F.R.C.V.S., Norfolk Street, Sheffield
Hon. Sec; Mr. J Clarkson, M.R.C.V.S., Garforth, nr. Leeds
Hon. Treas: Mr. A. McCarmick, M.R.C.V.S.,
Kirkstall-road, Leeds

Southern Branch:

Pres. Sir Stewart Stockman, 4 Whitehall Place, S.W.
Sec. T. C. Toope, 34 High Street, Dover

CENTRAL V.S.
Pres. Mr. J. W. McIntosh, M.R.C.V.S., 14 Templar-street, Myatt's Park, S.E.
Hon. Sec: Mr. H. A. MacCormack, M.R.C.V.S.,
122 St. George's Avenue, Tufnell Park, N.
Meetings, First Thursday in each month, except August and September, 10 Red Lion Square, Holborn, at 7 p.m.

EASTERN COUNTIES V.M.A.
Pres: Mr. E. H. Leach, F.R.C.V.S., The Chestnuts, Newmarket
Hon. Sec. & Treas: Mr. Sidney Smith, Junr., M.R.C.V.S.
37 High Street, Lowestoft
Meetings, Second Tuesday, Feb., July and Sept.

LINCOLNSHIRE V.M.S.
Pres. Mr. H. H. Truman, M.R.C.V.S., March, Cambs.
Hon. Sec: & Treas: Mr. C. W. Townsend, F.R.C.V.S.,
Long Stanton, Cambridge
Meetings, Second Thursday Feb., June, and October

ROYAL COUNTIES V.M.A.
Pres: Mr. David Wyllie, M.R.C.V.S., Tudor House, Staines
Hon. Sec. & Treas: Mr. G. P. Male, M.R.C.V.S., Reading
Meetings, Last Friday, Jan., April, July and Nov.

SOUTHERN COUNTIES V.S.
Pres: Mr. W. Hunting, F.R.C.V.S., London
Hon. Sec: Mr. J. Alex. Todd, M.R.C.V.S., Worthing
Hon. Treas: Mr. E. W. Baker, M.R.C.V.S., Wimborne
Meetings, Last Thursday, Mar., June and Sept.

SOUTH EASTERN V.A.
Pres. Mr. James Crowhurst, F.R.C.V.S., Canterbury
Hon. Sec. & Treas. Mr. Theo. C. Toope, M.R.C.V.S.,
34 High Street, Dover
Meeting, Second Wednesday in May: Maidstone

WESTERN COUNTIES V.M.A.
Pres: Mr. R. J. Collings, M.R.C.V.S., Exeter
Hon. Sec. Mr. W. Ascott, M.R.C.V.S., Bideford
Hon. Treas: Mr. P. G. Bond, M.R.C.V.S., Plymouth
Meetings, Third Thursday, March, July and November

Irish Branch:

Pres. Mr. W. Watson, Municipal Buildings, Dublin
Sec. Mr. P. D. Reavy, Leafield, Bundoran, Co. Donegal

CENTRAL V.A. OF IRELAND.
Pres: Mr. B. P. J. Mahony, M.R.C.V.S., Maryborough
Hon. Sec. Mr. E. C. Winter, F.R.C.V.S., Queen-st., Limerick
Treas: Mr. J. F. Healy, M.R.C.V.S., Midleton

CONNAUGHT V.M.A
Pres. Mr. D. Hamilton, M.R.C.V.S., Ballina
Hon. Sec. & Treas. Mr. A. J. Moffett, M.R.C.V.S., Galway

VET. MED. ASSN. OF IRELAND.
Pres; Mr. P. J. Howard, M.R.C.V.S., Ennis
Hon. Sec: J. J. O'Connor, M.R.C.V.S., R.V. Coll., Dublin
Hon. Treas: Prof. J. F. Craig, M.A., M.R.C.V.S.,
R.V. Coll., Dublin

NORTH OF IRELAND V.M.A.
Pres: Mr. H. McConnell, M.R.C.V.S., The Mall, Armagh
Hon. Sec: Mr. J. S. A. Jordan, M.R.C.V.S., Belfast
Hon. Treas; Mr. J. A. Thompson, F.R.C.V.S., Lurgan

Scottish Branch:

Pres. Dr. O. Charnock Bradley, } Ryl. (Dick) Vet.
Hon. Sec. Prof. A, Gofton, } Coll: Edinburgh

NORTH OF SCOTLAND V.M.S.
Pres: Mr. W. Marsden, M.R.C.V.S., Banff
Hon. Sec. & Treas: Mr. G. Howie, M.R.C.V.S. Alford, Aberdeen
Meetings, Last Saturday in January and August

ROYAL SCOTTISH V.S.
Pres: Mr. Reid, M.R.C.V.S., Auchtermuchty.

SCOTTISH METROPOLITAN V.M.S.
Pres: Mr. P. Wilson, M.R.C.V.S., Lanark
Hon. Sec: Mr. Jas. Henderson, M.R.C.V.S.,
Public Health Dept., City Chambers, Edinburgh

WEST OF SCOTLAND V.M.A.
Pres: Mr. J. Macfarlane, M.R.C.V.S, 75 West Nile-st, Glasgow
Hon. Sec: & Treasr: Mr. Robert Mitchell, M.R.C.V.S.,
1291 Argyll Street, Sandyford
Meetings, Second Wednesday, May, Oct. and January.

COLONIAL SOCIETIES: *(see preceding page)*

BRITISH COLUMBIA V.M.A.
Pres: Dr. Gibbons, M.R.C.V.S., Vancouver,
Hon. Pres: Dr. Hamilton, M.R.C.V.S., Victoria.
Sec., Treas., Registrar. Dr. T. Jagger, V.S., Vancouver.

CAPE OF GOOD HOPE V.M.S.
Pres. Mr. J. D. Borthwick, M.R.C.V.S., Cape Town
Hon. Sec. & Treas. Mr. R. W. Paine, F.R.C.V.S.

CENTRAL CANADA V.A.
Hon. Sec: Mr. A. E, James, Ottawa

VET. ASSN. OF MANITOBA.
Pres: Dr. W. R. Taylor, Portage la Prairie
Hon. Sec. & Treas: Dr. F. Torrance, Winnipeg

NATAL VETERINARY MEDICAL ASSOCIATION.
Pres. Mr. H. Watkins Pitchford, Govt. Bacteriologist, Pietermaritzburg
Hon. Sec. & Treas. Mr. J. B. Collyer,
Vety. Inspector Natal Police, Pietermaritzburg

ONTARIO V.A.
Pres: Mr. J. H. Tennent, V.S., London, Ontario
Sec: & Treas: Mr. C. H. Sweetapple, V.S., Toronto, Ontario

TRANSVAAL V.M.A.
Pres: Mr. C. E. Gray, F.V.S., Box 134, Pretoria.
Hon. Sec: Mr. P. Conacher, G.V.S., Box 877, Johannesburg